targeting of said physiologically effective substances to a specific site within said mammalian body, and/or a surfactant coating on said nanoparticles.

A1 Cont

16. The method of Claim 15, wherein said nanoparticle formulated in a composition which further comprises a physiologically acceptable carrier and/or diluent.

17. The method of Claim 15, wherein said cancer is brain cancer.

18. The method of Claim 15, wherein said polymeric material has a diameter of below 1,000nm.

19. The method of Claim 18, wherein said polymeric material has a diameter of from 1 to 1,000 nm.

20. The method of Claim 15, wherein said polymeric material is selected from the group consisting of polyacrylates, polymethacrylates, polycyanoacrylates, polyacrylamides, polylacetates, polyglycolates, polyanhydrates, polyorthoesters, gelatin, polysaccharides, albumin, polystyrenes, polyvinyls, polyacrolein, polyglutaraldehydes; derivatives; copolymers and mixtures thereof.

21. The method of Claim 15, wherein said physiologically effective substances are adsorbed, absorbed and/or incorporated in the nanoparticles.

22. The method of Claim 15, wherein said physiologically effective substances comprises one or more chemotherapeutic agents for the cancer treatment.

23. The method of Claim 22, wherein said chemotherapeutic agents are selected from the group consisting of alkylating agents, antimetabolites, natural anticancer products, hormones, metal co-ordination complexes and mixtures thereof.

24. The method of Claim 22, wherein said chemotherapeutic agents are selected from the group consisting of nitrogen mustards, nitroso ureas, ethylene imines, methylmelamines,

folic acid analogs, pyrimidine analogs, purine analogs, vinca alkaloids, epipodophyllotoxins, antibiotics, estrogens, gonadotropin-releasing hormon analogs, antiestrogens, androgens, platinum complexes and mixtures thereof.

A1 Cont

25. The method of Claim 22, wherein said chemotherapeutic agents are doxorubicin and/or mitoxantrone.

26. The method of Claim 15, wherein the stabilizer and/or surfactant coating material is selected from the group consisting of stabilizers/surfactants which allow a passage of said nanoparticles including said physiologically effective substance(s) across the blood brain barrier in said mammal and stabilizers/surfactants which allow a release of said physiologically effective substance(s) from said nanoparticles and a passage of said substance(s) across the blood/brain barrier separate from said nanoparticles.

27. The method of Claim 26, wherein said stabilizer/surfactant comprises a substance selected from the group consisting of polysorbates, dextrans, carboxylic acid esters of multifunctional alcohols, polyoxamers, polyoxamines, alkoxylated ethers, alkoxylated esters, alkoxylated monoglycerides, alkoxylated diglycerides, alkoxylated triglycerides, alkoxylated phenols, alkoxylated diphenols, substances of the Genapol^{R} and Bauki^{R} series, metal salts of carboxylic acids, metal salts of alcohol sulfates, and metal salts of sulfosuccinates and mixtures of two or more of said substances.

28. The method of Claim 26, wherein said stabilizer/surfactant comprise a substance selected from the group consisting of polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, polysorbate 81, polysorbate 85, dextran 12,000, dextran 70,000, fatty acid esters of glycerol and sorbitol as glycerol monostearate, sorbitan monostearate, sorbitan monooleate, polyoxamer 188 (Pluronic R F68), ethoxylated ethers, ethoxylated esters,

ethoxylated triglycerides, ethoxylated phenols and diphenols, metal salts of fatty acids, and metal salts of fatty alcohol sulfates.

A1 cont

29. The method of Claim 26, wherein said stabilizer/surfactant comprise a substance selected from the group consisting of sodium salts of fatty acids, sodium salts of fatty alcohol sulfates and mixtures of two or more of said substances

30. The method of Claim 26, wherein said stabilizer/surfactant comprise sodium stearate and/or sodium lauryl sulfate.

31. The method of Claim 26, wherein said stabilizer/surfactant comprise a substance selected from the group consisting of polysorbate 80, polysorbate 85, dextran 12,000, dextran 70,000 and mixtures thereof.

32. The ~~method of Claim 16~~, wherein said carrier and/or diluent are selected from the group consisting of water, physiologically acceptable aqueous solutions containing salts and/or buffers.

33. The method of Claim 15, wherein said administering is intravenous administering.

34. The method of Claim 15, wherein said mammal is a human.--